

### ABSTRACT

A semiconductor device manufacturing technique measures simultaneously a plurality of points on a sample to realize a high-speed three-dimensional shape measurement and reflects it to setting of a processing condition in a semiconductor device process, thereby making it possible to realize stable device manufacture with high precision. A three-dimensional shape measuring apparatus loaded on a processing apparatus such as an etcher, a coater-developer, a baking machine, or a lithography machine measures a plurality of points (500) on a sample (300) at high speed by arranging a plurality of measurement heads (100) for measuring a three-dimensional shape of the sample and by combining it with movement of an loader/stage (200) loading the sample (300). By using this measurement result, feeding back for correcting a processing condition with respect to the subsequent sample (300) and feeding forward for correcting a processing condition in the next step are realized.